VAX/VMS Systems Dispatch

July 1986

AD-L034A-32

digital software

VAX/VMS SYSTEMS DISPATCH

Published by
Corporate Administrative Services Group, Software Services
Digital Equipment Corporation
129 Parker Street (PKO2/E49)
Maynard, MA 01754

The **VAX/VMS Systems Dispatch** contains new and revised Software Product Descriptions, programming notes, software problems statements and responses. Much of the material is developed from Software Performance Report (SPR) answers significant to the general audience and is printed here to supplement the maintenance updates.

DECnet-VAX
DECtype/VMS
VAX ReGIS Graphics Library
RTEM-11
VAX Ada
VAX ADE
VAX BASIC
VAX BLISS
VAX C
VAX CDD
VAX COBOL
VAX CORAL-66
VAX DATATRIEVE
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VAX DSM
VAX
VAX FORTRAN
VAX MUX200
VAX PASCAL
VAX PL/I
VAX SPM
VAX TDMS
VAX 2780/3780 Protocol Emulator
VAX 3271 Protocol Emulator
FORTRAN IV/VAX to RSX (Cross Compiler)
VAX SORT/MERGE VAX
PDP DATATRIEVE/ VAX

DISTRIBUTION

The **VAX/VMS Systems Dispatch** is directed to one software contact for each software product. No mailing will be made to addresses without a software contact name. **Address change requests should be sent to the nearest DIGITAL field office. Include the new address and mailing label from the most recently received publication.**

Software binary and sources are provided under licenses only. The standard Terms and Conditions, OEM Agreement, and/or Quantity Discount Agreement contain the licenses for all binaries other than DECsystem-10.

Barbara Scollan, Associate Editor

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HELPFUL HINTS FOR WRITING SPRs

HINTS FOR WRITING SPRS

1.0 Introduction

Software Performance Reports (SPRs) exist to benefit customers as well as DIGITAL. They provide informaton to customers and feedback to DIGITAL about software problems.

The following descriptions provide guidelines for submitting information to DIGITAL so that SPR problems can be solved. Some information is common to all SPRs; other information is requested for only certain types of problems.

2.0 SPR Priority Levels

The following explanations of SPR priorities should be used as a guideline for determining the priority of an SPR. Please note that the priority determination should be based on the system or facility behavior that has actually been experienced at the site and should not be based on the perception of the impact of a potential problem.

Priority	Explanation
1.	MOST PRODUCTION WORK CANNOT BE RUN e.g., important production software is unusable, the system will not boot, necessary peripherals cannot be used as intended, no workaround exists.
2.	SOME PRODUCTION WORK CANNOT BE RUN e.g., certain functions or jobs are not usable, level of performance is not as expected or some documented feature does not work as expected but there is a workaround.
3.	ALL PRODUCTION WORK CAN BE RUN WITH SOME IMPACT ON USER e.g., significant manual intervention is required, performance has degraded but work can still be done.
4.	ALL PRODUCTION WORK CAN BE RUN WITH NO SIGNIFICANT IMPACT ON USER e.g., problem can be patched easily, simple bypass procedure exists.
5.	NO SYSTEM MODIFICATIONS NEEDED TO RETURN TO NORMAL PRODUCTION e.g., suggestion, consultation, documentation error or inquiry.

3.0 General Guidelines

This section covers the information that snould be provided with all SPRs. Depending upon the problem, this information will vary in quantity and content. Remember that the more pertinent information that is included, the easier it is for DIGITAL to resolve the problem.

3.1 Scenario

A complete scenario should be supplied, usually in the form of a batch log console listing or SET HOST/LOG output file that shows exactly how the problem is produced. Supplying only the output produced by the problem is not enough. The entire scenario of what was done by the user is needed. The problem may be caused by an interaction between various system events, software packages, devices, SYSGEN parameters, DCL symbols or logical names. Some or all of the displays generated by the following commands may be required for different problems:

```
$ SHOW LOGICAL/ALL/FULL
$ SHOW SYMBOL/ALL/GLOBAL

$ RUN SYS$SYSTEM:SYSGEN
SYSGEN>  USE ACTIVE
SYSGEN>  SHOW/ALL
SYSGEN>  SHOW/SPECIAL
SYSGEN>  EXIT
```

3.2 Limit Problem Scope

As much as possible, eliminate all extraneous elements from the scenario. For example, if the execution of a very large program causes a problem, shorten the program to include only the code that causes the problem or write a small program that demonstrates the problem. This action has two benefits: first, logic errors may be discovered; second, the maintainer looking into the problem does not have to comprehend unnecessary material.

3.3 Machine-readable Files

If possible, supply any software needed to reproduce the problem. This may include source programs, image files, sample data, command procedures, logical names etc. If source programs are submitted, also include any libraries or require files referenced. These files must be provided in machine-readable format. Console medium or ANSI magtape are the best media to include with the SPR.

If the problem involves a system crash, include the system dump.

The data should be written to an ODS-2 format disk or an ANSI magtape. For example, the following commands will copy the system dump file to an ANSI magtape:

```
$ INIT MTA0: DUMPS
$ MOUNT/FOREIGN MTA0:
$ BACKUP/IGNORE=NOBACKUP SYS$SYSTEM:SYSDUMP.DMP -
_$ MTA0:DUMPS/SAVE
$ DISMOUNT MTA0:
```

NOTE

Since the system dump file is frequently marked NOBACKUP (telling the BACKUP utility to copy the file attributes but not its contents), the dump file be must copied with:

```
BACKUP/IGNORE=NOBACKUP
```

This will insure that the file contents are copied, as well as the file attributes. The commands used to write the media should also be provided with the SPR.

On a MicroVAX, where there is no console block storage device, use one of the floppy diskette drives to create machine-readable medium to be included with the SPR. The following commands can be used to copy files:

```
$ INIT  $FLOPPY1: SPRDATA
$ MOUNT  $FLOPPY1: SPRDATA
$ CREATE/DIRECTORY  $FLOPPY1:[DUMP]
$ BACKUP MYDATA.DAT,MYIMAGE.EXE  $FLOPPY1:[DUMP]SPRDATA/SAVE
$ DISMOUNT  $FLOPPY1:
```

On a full VAX, where there is a console block storage device, the following commands can be used to copy machine-readable data:

```
$ RUN SYS$SYSTEM:SYSGEN
SYSGEN>  CONNECT CONSOLE
SYSGEN>  EXIT
```

(At this time, remove the console medium and place a scratch volume in the console block storage device.)

```
$ INIT CSA1: SPRDATA
$ MOUNT CSA1: SPRDATA
$ CREATE/DIRECTORY CSA1:[DUMP]
$ BACKUP MYDATA.DAT,MYIMAGE.EXE CSA1:[DUMP]SPRDATA/SAVE
$ DISMOUNT CSA1:
```

It is important to use BACKUP to write the media submitted with an SPR. Transferring files in a save set produced by BACKUP is much more reliable than copying files to the media.

When machine-readable data is not provided in BACKUP save-set format, include the exact commands that were used to write the data and the commands used for reading it. Other formats are discouraged, since they may cause problems.

All machine-readable media submitted with SPRs will be returned to the customer.

3.4 System Environment

Every computer site runs a different type of workload. Some problems only appear under certain conditions. For example, some sites give different classes of users different base priorities. These sites may encounter problems that other sites do not. This information can be extremely important in resolving the problem, especially for system hangs or system crashes.

Describe any special software packages that are being used. Also, mention any foreign hardware devices or user-written drivers.

Software version numbers should be included. For example, if there is a problem with accessing local symbols during a DEBUG session, the version numbers of DEBUG and all relevant compilers/assemblers should be specified.

If any patches other than those from maintenance updates are being used, they should be mentioned in the SPR.

3.5 User Analysis (Optional)

Optionally, an analysis of the problem may be included. Any useful miscellaneous information should be included, such as, "Without xyz happening, the problem could not be reproduced" or "On version Vx.y, this problem does not occur."

4.0 Problem-specific Information to Include

Resolution of different classes of problems generally requires different kinds of additional information.

NOTE

For those items that are identified with a single asterisk (*), the raw data file (SYS$ERRLOG:ERRLOG.SYS), not the formatted output from the ANALYZE/ERROR utility, should be included. Formatted output frequently does not include all the information needed to resolve the problem.

For those items that are identified with a double asterisk (**), the raw data file (SYS$SYSTEM:SYSDUMP.DMP), not the formatted output from the SDA utility, should be included. Formatted output usually does not include all the information needed to resolve the problem.

Problem	Information to Include
System Bugcheck/Crash	A machine-readable copy of the system dump file must be included.** (Output from the SDA utility should not be sent since it usually does not include enough information to resolve the problem). A copy of the error log at the time of the error should also be included because many system problems are triggered by hardware errors.*
Machine-check:	On a machine check, include a machine-readable copy of the error log, not output from the error log generator.* A machine-readable copy of the system dump file should also be included. **
System Hang:	When a system appears "hung" (no response on any terminals), the system should be manually crashed and the system dump file included with the SPR. When the system is shut down in this way, the console listing is very important and should be included with the SPR.

On VAX-11/730, VAX-11/780, VAX-11/782, VAX-11/785, and VAX 8600 primary console terminals, enter: (do nothing on the attached processor's console)

```
^P
HALT
@CRASH
```

On VAX-11/750 console terminal,
enter:

```
^P
E P
E/I 0
E
E
E
E
D/G F FFFFFFFF
D P 1F0000
C
```

On MicroVAX I:

Push the HALT button on the front panel of the CPU box twice, so that the button is latched out (the red light in the center of the button is out).

Then, on the console terminal, enter:

```
E P
E/I 0
E +
E +
E +
E +
D/G F FFFFFFFF
D P 1F0000
C (Then wait a minute or so)
```

Note: If a CRT is being used, copy the displayed values from the examine commands to paper and submit them with the SPR.

On MicroVAX II:

Enable the HALT button via the switch on the back panel of the CPU box.

Push the HALT button on the front panel of the CPU box twice, so that the button is latched out (the red light in the center of the button is out).

Then, on the console terminal, enter:

```
E PSL
E/I 0
E +
E +
E +
E +
D PC FFFFFFFF
D PSL 1F0000
C (Then wait a minute or so)
```

Note: If a CRT is being used, copy the displayed values from the examine commands to paper and submit them with the SPR.

The preceding command sequences cause the VAX or MicroVAX system to bugcheck in a manner that is recognized by VMS developers as a forced crash.

Also include a description of the currently running workload.

VAXclusters:

If all machines in a VAXcluster are "hung" for a reason other than an explainable lack of quorum, a coordinated set of dumps plus console listings from all machines may be required for diagnosis. A coordinated set of dumps is a dump from every machine in the cluster taken in a way that ensures that the lock and other data structures are consistent between all dumps. To take a coordinated dump, first halt every VAX in the cluster. The last machine must be halted no more than 99 seconds after the first machine is halted. After all machines have been halted, crash each machine as directed under SYSTEM HANG, and provide all of the dumps and all of the console logs with your SPR.

Executive:

If it appears that there is a problem with the executive code, include the active values of the system parameters. These can be obtained by invoking SYSGEN and entering both the SHOW/ALL and SHOW/SPECIAL commands.

A machine-readable copy of the source program showing the problem plus libraries, require files, and build files should also be included, if possible.

Also include a copy of the machine-readable error log at the time of the problem. *

Devices:

For any suspected device or device driver error, include a copy of the error log at the time of the problem. *

Corrupted RMS Files:

When an RMS file becomes corrupted by software, an SPR should always be submitted. Items to include with the SPR are:

1) A copy of the corrupted file.

2) Any programs (preferably with sources) and data that are necessary to reproduce the corruption. Note the distinction between programs that merely demonstrate that the file is corrupt, as opposed to a program that causes the corruption to occur. Please try to trim down the program to isolate the specific operations that led to the corruption.

3) A description of how the file is being processed when the corruption occurs. For example, how many users are accessing the file, what kind of operations are being performed on the file ($UPDATEs, $PUTs, $DELETEs, etc.).

Sometimes accessing a corrupted file can cause nonfatal bugchecks. If it

appears that a process is continually disappearing from the system, check the error log for nonfatal bugchecks. If this is the case, include a crash dump with the SPR. To obtain a crash dump (assuming the system manager has given permission), perform the procedure below. Since this procedure will crash the system, it is suggested that it be performed during off-peak hours. Be sure to give adequate warning if there are any users on the system.

```
$ RUN SYS$SYSTEM:SYSGEN
SYSGEN>  USE ACTIVE
SYSGEN>  SET BUGCHECKFATAL 1
SYSGEN>  WRITE ACTIVE
SYSGEN>  EXIT
$ RUN PROGRAM_THAT_BUGCHECKS
```

Intermittent: For a problem that is intermittent or that is not reproducible, include a copy of the machine-readable error log at the time of the problem. *

Command Language Interpreters: When submitting an SPR on a command language interpreter, it is important to show all symbols and logical names defined on the system by using the following commands:

```
SHOW SYMBOL/ALL/GLOBAL
SHOW SYMBOL/ALL/LOCAL
SHOW LOGICAL/ALL/FULL
```

Also, indicate whether private or modified command tables are being used.

Job Controller: If the job controller process encounters a fatal error condition, it aborts execution and restarts itself (as a new process). Upon restart, the system job queue file is not reopened automatically; a START/QUEUE/MANAGER command and

appropriate START/QUEUE commands must be manually issued to restart batch and print processing for that node.

For this type of controller problem, include a copy of the console log error message and a machine-readable copy of the job controller process dump written by the system to SYS$SYSTEM:JOBCTL.DMP. In addition, if the START/QUEUE/MANAGER command fails because of a corrupted system job queue file, also include a machine-readable copy of the queue file. The default queue file name is SYS$SYSTEM:JBCSYSQUE.DAT.

Print Symbiont:

Print symbiont process dump:

If the print symbiont exits, a message from the job controller is printed on the console, together with an error message from the print symbiont. Also, a symbiont process dump is written to SYS$SYSTEM:PRTSMB.DMP. Include a copy of these console log messages and a machine-readable copy of the symbiont process dump. Also include copies of the displays:

```
SHOW QUEUE/FULL/ALL
SHOW PRINTER (for all
        printer execution queues)
SHOW QUEUE/FORM/FULL
SHOW TERMINAL (all terminal
        execution queues)
```

If a file was involved, include a DIRECTORY/FULL of the file and, if possible, a machine-readable copy of the file. If at all possible, attempt to explain the conditions which directly preceded the symbiont exit, such as commands used or attempted, and/or a detailed description of the symbiont behavior prior to exiting.

Unexpected format or output generated with print symbiont:

If the print symbiont problem exists in the formatting or output of data, include a machine-readable copy of the file and the library modules in use when printing.

Include a DIRECTORY/FULL display of the file and a copy of the displays using the following commands:

SHOW QUEUE/FULL/ALL
SHOW QUEUE/FORM/FULL
SHOW PRINTER and/or SHOW TERMINAL (whichever is applicable)

Along with a description of the explicit PRINT command, include qualifiers and a copy of the FILE TRAILER page. Please provide all information required to reproduce the behavior consistently.

User-written and user-modified symbiont problems:

Describe the problem as completely as possible, including the intent of the user symbiont. Supply all details surrounding the problem and include a well-commented listing of the user-supplied symbiont or routine. If the problem is associated with the specification of the queue, form, characteristics, parameters, or other input to the DCL command line, include a log file or a description of the PRINT command which demonstrates the problem.

LIBRARIAN:

If there is a problem with the LIBRARIAN, include the following material:

1. A machine-readable copy of the library itself
2. Machine-readable copies of all input files to the library
3. Information (DIRECTORY/FULL) on the library file
4. Information (LIBRARY/LIST/FULL) on the library contents

If the problem can be duplicated at will, include the scenario and any command files used.

LINKER: If there is a problem with the LINKER, include machine-readable copies of the object files, shareable images, and libraries used in the link, along with a full map (LINK/MAP/FULL).

Debugger: Include sources, objects, and images for the program being debugged. If the program is large, it would be very helpful to reduce the size of the program to demonstrate the same problem. Also include a log of the debugging session and include the DEBUG.LOG file that the debugger produces.

DECnet: For a DECnet problem, supply configurations of the systems involved in the problem. This information should include the version numbers of the operating systems and DECnet, the hardware on both systems, and the patch level of the DECnet software on the non-VMS system, if applicable. Depending on the nature of the problem, it might also be applicable to supply hard-copy display of executor, line or circuit parameters and/or counters.

Terminals: If there is a problem with the terminal driver, provide the following information:

1. A list of terminal characteristics (SHOW TERMINAL)
2. The type of terminal
3. The type of modem (if any)
4. Any special front-end equipment
5. Any unusual terminal configuration

If the problem involves remote file access, it is often useful for the maintainer to know if the same or similar operation can be performed from a different account, or with the source and destination nodes reversed.

Compiler/Assembler: If there is a problem with the assembler or a compiler, include the source program that caused the problem. (It is very important to include all require files and libraries that are referenced by the source program).

It is especially important to limit the scope of the problem when submitting SPRs on compilers.

Include the version number of the compiler and the version number of the operating system.

NEWS BULLETIN

Run-Time Library Documentation Correction

The VAX/VMS Version 4.4 documentation update package contains an error in the instructions for updating the VAX/VMS Run-Time Library Routines Reference Manual.

The update notice page includes the following line:

Old Page	New Page
RTL-645/646 through RTL-663/664	RTL-645/646 through RTL-663/664

Replace it with the following:

Old Page	New Page
RTL-645/646	RTL-645/646
RTL-659/660 through RTL-663/664	RTL-659/660 through RTL-663/664

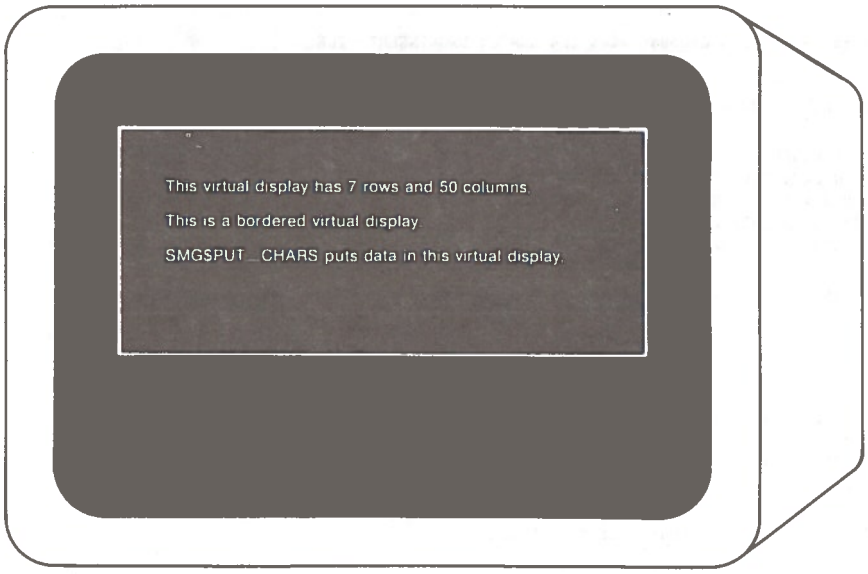
The consequence of having followed the instructions is that you might have deleted pages RTL-647 through RTL-658, which remain unchanged in Version 4.4. Since these 12 pages have not been modified since Version 4.2, they were not included in the Version 4.4 update package. We are republishing these pages; if you have deleted them from your manual, remove the following 12 pages from the VAX/VMS Systems Dispatch and insert them into your Run-Time Library Manual.

EXAMPLE

```
C+
C This FORTRAN example program demonstrates the use of SMG$INSERT_LINE.
C
C Include the SMG definitions. In particular, we want SMG$M_BORDER,
C SMG$M_UNDERLINE, and SMG$M_UP.
C-
        INCLUDE '($SMGDEF)'
        INTEGER SMG$CREATE_VIRTUAL_DISPLAY, SMG$CREATE_PASTEBOARD
        INTEGER SMG$PASTE_VIRTUAL_DISPLAY,  SMG$PUT_CHARS,
     1          SMG$ERASE_DISPLAY
        INTEGER DISPLAY1, PASTE1, ROWS, COLUMNS
C+
C Use SMG$CREATE_VIRTUAL_DISPLAY to create a virtual display
C with a border.
C-
        ROWS = 7
        COLUMNS = 50
        ISTATUS = SMG$CREATE_VIRTUAL_DISPLAY
     1          (ROWS, COLUMNS, DISPLAY1, SMG$M_BORDER)
        IF (.NOT. ISTATUS) WRITE (6, 900) 'SMG$CREATE_VIRTUAL_DISPLAY',
     1          ISTATUS
C+
C Call SMG$CREATE_PASTEBOARD to create the pasteboard.
C-
        ISTATUS = SMG$CREATE_PASTEBOARD (PASTE1)
        IF (.NOT. ISTATUS) WRITE (6, 900) 'SMG$CREATE_PASTEBOARD',
                ISTATUS
C+
C Use SMG$PUT_CHARS to put data in the virtual display.
C-
        DISTATUS = SMG$PUT_CHARS ( DISPLAY1,
     1          ' This virtual display has 7 rows and 50 columns.', 2, 1)
        ISTATUS = SMG$PUT_CHARS ( DISPLAY1,
     1          ' This is a bordered virtual display.', 4, 1)
        ISTATUS = SMG$PUT_CHARS ( DISPLAY1,
     1          ' SMG$PUT_CHARS puts data in this virtual display.', 6,
     1          1)
C+
C Paste the virtual display by calling SMG$PASTE_VIRTUAL_DISPLAY.
C-
        ISTATUS = SMG$PASTE_VIRTUAL_DISPLAY ( DISPLAY1, PASTE1, 4, 15)
900     FORMAT (' Routine ', A, ' returned a status of ', Z8)
C+
C Call SMG$INSERT_LINE to add a line of text after line 6 and scroll
C the display. Also, underline the new characters.
C-
        ISTATUS = SMG$INSERT_LINE ( DISPLAY1, 7,
     1          'This is a new line.', SMG$M_UP, SMG$M_UNDERLINE)
        END
```

The initial output generated by this FORTRAN program is shown in Figure RTL–25.

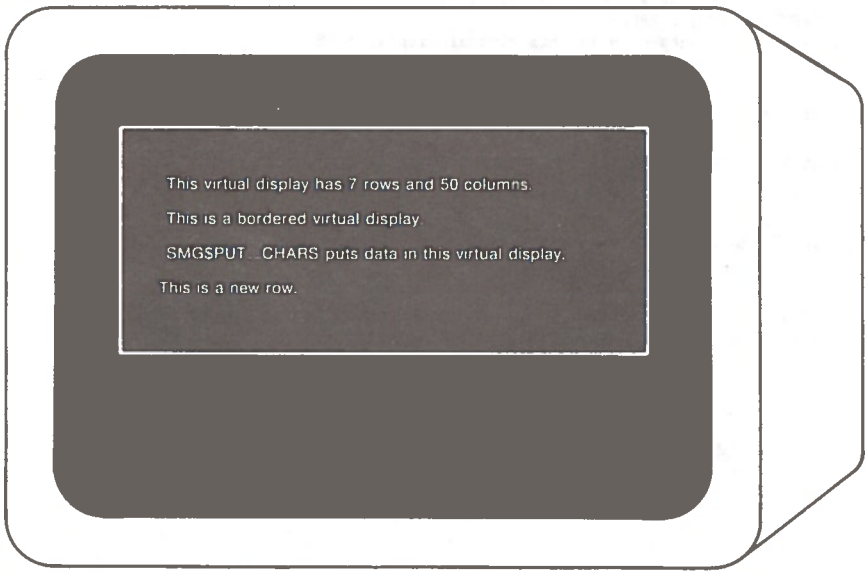
Figure RTL–25 Output Generated Before the Call to SMG$INSERT_LINE



ZK-4132-85

The output generated after the call to SMG$INSERT_LINE is shown in Figure RTL–26.

Figure RTL–26 Output Generated After the Call to SMG$INSERT_LINE



ZK-4131-85

SMG$INVALIDATE_DISPLAY—Mark a Display As Invalid

SMG$INVALIDATE_DISPLAY marks a display as invalid and causes the entire display to be redrawn.

FORMAT

SMG$INVALIDATE_DISPLAY *display-id*

RETURNS

VMS Usage: **cond_value**
type: **longword (unsigned)**
access: **write only**
mechanism: **by value**

ARGUMENT

display-id

VMS Usage: **longword_unsigned**
type: **longword (unsigned)**
access: **read only**
mechanism: **by reference**

Specifies the virtual display affected. The **display-id** argument is the address of an unsigned longword that contains the display identifier.

Display-id is returned by SMG$CREATE_VIRTUAL_DISPLAY.

DESCRIPTION

SMG$INVALIDATE_DISPLAY marks a display as invalid, and redraws the entire display. You would normally use this routine after you determine that output has been written to the display without benefit of the Screen Management Facility.

CONDITION VALUES RETURNED

SS$_NORMAL	Normal successful completion.
SMG$_INVDIS_ID	Invalid **display-id**.

SMG$LABEL_BORDER—Label A Virtual Display Border

SMG$LABEL_BORDER supplies a label for a virtual display's border.

FORMAT

SMG$LABEL_BORDER *display-id [,label-text] [,position] [,units] [,rendition_set] [,rendition-complement] [,char-set]*

RETURNS

VMS Usage: **cond_value**
type: **longword (unsigned)**
access: **write only**
mechanism: **by value**

ARGUMENTS

display-id

VMS Usage: **longword_unsigned**
type: **longword (unsigned)**
access: **read only**
mechanism: **by reference**

Specifies the virtual display affected. The **display-id** argument is the address of an unsigned longword that contains the display identifier.

Display-id is returned by SMG$CREATE_VIRTUAL_DISPLAY.

label-text

VMS Usage: **char_string**
type: **character string**
access: **read only**
mechanism: **by descriptor**

The new label for this display's border. The **label-text** argument is the address of a descriptor pointing to the label text. If omitted, the display becomes unlabeled.

position

VMS Usage: **longword_unsigned**
type: **longword (unsigned)**
access: **read only**
mechanism: **by reference**

Specifies which of the display's borders contains the label. The **position** argument is the address of an unsigned longword that contains the position code.

Valid positions are as follows:

- SMG$K_TOP
- SMG$K_BOTTOM

- SMG$K_RIGHT
- SMG$K_LEFT

If this argument is omitted, the label is displayed on the top border.

units

VMS Usage: **longword_signed**
type: **longword integer (signed)**
access: **read only**
mechanism: **by reference**

Specifies the character position at which the label begins within the border. The **units** argument is the address of a signed longword integer that contains the character position. If omitted, the label is centered in the specified border.

rendition-set

VMS Usage: **mask_longword**
type: **longword (unsigned)**
access: **read only**
mechanism: **by reference**

Mask which denotes video attributes for the drawn line. The **rendition-set** argument is the address of an unsigned longword that contains a video attributes mask. Each bit attribute in this argument causes the corresponding attribute to be set in the display.

Video attributes which can be manipulated in this manner are as follows:

SMG$M_BLINK	Displays blinking characters
SMG$M_BOLD	Displays characters in higher-than-normal intensity
SMG$M_REVERSE	Displays characters in reverse video, that is, using the opposite default rendition of the virtual display
SMG$M_UNDERLINE	Displays underlined characters

If the same bit is set in both the **rendition-set** and **rendition-complement** arguments, the Screen Management Facility applies the **rendition-set** attribute followed by the **rendition-complement** attribute. Using these two arguments, the caller can exercise independent control over each attribute in a single call.

rendition-complement

VMS Usage: **mask_longword**
type: **longword (unsigned)**
access: **read only**
mechanism: **by reference**

A mask which denotes video attributes for the line drawn. The **rendition-complement** argument is the address of an unsigned longword that contains a video attributes mask. Each bit attribute in this argument causes the corresponding attribute to be set in the display. Video attributes which can be manipulated in this manner are the same as those for the **rendition-set** argument.

The following table shows the action taken by the Screen Management Facility for various combinations of **rendition-set** and **rendition-complement** attributes.

Set	Complement	Action
0	0	Attribute unchanged
1	0	Attribute on
0	1	Attribute set to complement of default setting
1	1	Attribute off

char-set

VMS Usage: **longword_unsigned**
type: **longword (unsigned)**
access: **read only**
mechanism: **by reference**

Specifies the default character set for all text in this virtual display. The **char-set** argument is the address of an unsigned longword that contains the character set code. At this time, the only valid value is SMG$C_ASCII, which is also the default.

DESCRIPTION

SMG$LABEL_BORDER lets you specify text to label a virtual display. If the specified virtual display does not already have the border display attribute (SMG$M_BORDER), then this attribute is forced. If the label string is supplied, it replaces the current label text for this border. If you supply an empty (null) label string, the border becomes unlabeled. If the label text (as positioned within the border) does not fit within the border, this routine returns SMG$_INVARG.

Position and **units** together specify the starting position of the label text within a border. If **position** is omitted, the default is the top border. If **units** is omitted, this routine chooses a starting position so as to center the text either horizontally or vertically, depending on the implicit or explicit position argument. If both **position** and **units** are omitted, the text is centered in the top border.

Units specifies the label's starting row or column position in the border.

CONDITION VALUES RETURNED

SS$_NORMAL	Normal successful completion.
SMG$_INVDIS_ID	Invalid **display-id**.
SMG$_INVARG	Invalid argument. The combination of **position**, **units**, and **label-text** arguments resulted in a position outside the border area.
SMG$_WRONUMARG	Wrong number of arguments.

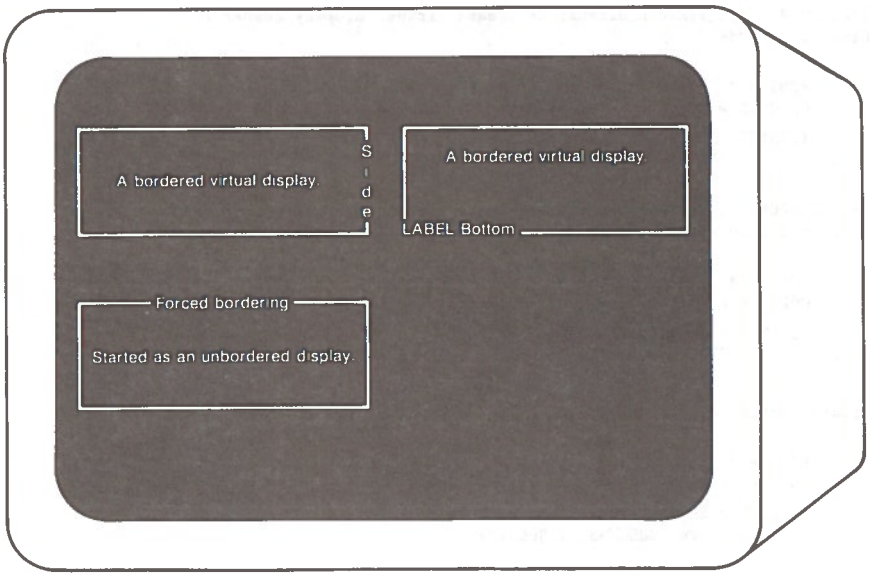
EXAMPLE

```
C+
C This FORTRAN example program demonstrates the use of SMG$LABEL_BORDER.
C-
C+
C Include the SMG definitions. In particular, we want SMG$M_BORDER,
C SMG$K_TOP, SMG$K_BOTTOM, and SMG$K_RIGHT.
C-
        INCLUDE '($SMGDEF)'
        INTEGER SMG$CREATE_VIRTUAL_DISPLAY, SMG$CREATE_PASTEBOARD
```

```
      INTEGER SMG$PASTE_VIRTUAL_DISPLAY,  SMG$PUT_CHARS
      INTEGER DISPLAY1, PASTE1
      INTEGER DISPLAY2, PASTE2
      INTEGER DISPLAY3, PASTE3, ROWS, COLUMNS
C+
C Call SMG$CREATE_VIRTUAL_DISPLAY to create virtual display number 1.
C Give it a border.
C-
      ROWS = 4
      COLUMNS = 30
      ISTATUS = SMG$CREATE_VIRTUAL_DISPLAY
     1          (ROWS, COLUMNS, DISPLAY1, SMG$M_BORDER)
C+
C Call SMG$CREATE_VIRTUAL_DISPLAY to create virtual display number 2.
C Give it a border.
C-
      ROWS = 3
      COLUMNS = 30
      ISTATUS = SMG$CREATE_VIRTUAL_DISPLAY
     1          (ROWS, COLUMNS, DISPLAY2, SMG$M_BORDER)
C+
C Create virtual display number 3. Do NOT give it a border.
C-
      ROWS = 4
      COLUMNS = 35
      ISTATUS = SMG$CREATE_VIRTUAL_DISPLAY
     1          (ROWS, COLUMNS, DISPLAY3)
C+
C Use SMG$CREATE_PASTEBOARD to create the pasteboard.
C-
      ISTATUS = SMG$CREATE_PASTEBOARD (PASTE1)
C+
C Call SMG$PUT_CHARS to put data into the virtual displays.
C-
      ISTATUS = SMG$PUT_CHARS ( DISPLAY1,
     1          ' A bordered virtual display.', 2, 1)
      ISTATUS = SMG$PUT_CHARS ( DISPLAY2,
     1          ' A bordered virtual display.', 1, 1)
      ISTATUS = SMG$PUT_CHARS ( DISPLAY3,
     1          ' Started as an unbordered display.', 2, 1)
C+
C Call SMG$LABEL_BORDER to label the virtual display borders.
C-
      ISTATUS = SMG$LABEL_BORDER ( DISPLAY1, 'Side', SMG$K_RIGHT)
      ISTATUS = SMG$LABEL_BORDER ( DISPLAY2, 'LABEL Bottom',
     1          SMG$K_BOTTOM, 1)
      ISTATUS = SMG$LABEL_BORDER ( DISPLAY3, 'Forced bordering ',
     1          SMG$K_TOP)
C+
C Call SMG$PASTE_VIRTUAL_DISPLAY to paste the virtual displays.
C-
      ISTATUS = SMG$PASTE_VIRTUAL_DISPLAY ( DISPLAY1, PASTE1, 2, 10)
      ISTATUS = SMG$PASTE_VIRTUAL_DISPLAY ( DISPLAY2, PASTE1, 2, 45)
      ISTATUS = SMG$PASTE_VIRTUAL_DISPLAY ( DISPLAY3, PASTE1, 10, 5)
900   FORMAT (' Routine ', A, ' returned a status of ', Z8)
      END
```

The output generated by this program is shown in Figure RTL–27.

Figure RTL–27 Output Generated by Program Calling SMG$LABEL_BORDER



SMG$LIST_KEY_DEFS—List Key Definitions

SMG$LIST_KEY_DEFS returns the definition (equivalence string) associated with a specified key in a specified key table.

FORMAT

SMG$LIST_KEY_DEFS *key-table-id ,context [,key-name] [,if-state] [,attributes] [,equiv-string] [,state-string]*

RETURNS

VMS Usage: **cond_value**
type: **longword (unsigned)**
access: **write only**
mechanism: **by value**

ARGUMENTS

key-table-id

VMS Usage: **longword_unsigned**
type: **longword (unsigned)**
access: **read-only**
mechanism: **by reference**

Specifies the key table from which you are extracting a key definition. The **key-table-id** argument is the address of an unsigned longword that contains the key table identifier.

Key-table-id is returned by the SMG$CREATE_KEY_TABLE routine.

context

VMS Usage: **context**
type: **longword integer (signed)**
access: **modify**
mechanism: **by reference**

Provides a means to extract a series of key definitions from a key table. The **context** argument is the address of a signed longword integer that contains the context variable. For the first call to this routine, you should set the **context** argument to zero.

Context is incremented by the SMG$LIST_KEY_DEFS routine so that the next call returns the next key definition.

key-name

VMS Usage: **char_string**
type: **character string**
access: **modify**
mechanism: **by descriptor**

Identifies the key whose value you are listing. The **key-name** argument is the address of a descriptor pointing to the key name.

if-state

VMS Usage: **char_string**
type: **character string**
access: **write only**
mechanism: **by descriptor**

Receives the state name which qualifies the next definition in the key table. The **if-state** argument is the address of a descriptor pointing to the storage into which the state name is written.

attributes

VMS Usage: **longword_unsigned**
type: **longword (unsigned)**
access: **write only**
mechanism: **by reference**

Attributes of this key definition. The **attributes** argument is the address of an unsigned longword into which is written the key attributes.

Possible attributes are as follows:

SMG$V_KEY_NOECHO (Bit 0)	If set, this bit specifies that **equiv_string** is not to be echoed when this key is pressed; if clear, **equiv_string** is echoed. If SMG$V_KEY_TERMINATE is not set, SMG$V_KEY_NOECHO is ignored.
SMG$V_KEY_TERMINATE (Bit 1)	If set, this bit specifies that when this key is pressed (as qualified by **if-state**), the input line is complete and more characters should not be accepted. If clear, more characters may be accepted.
SMG$V_KEY_LOCKSTATE (Bit 2)	If set, and if **state-string** is specified, the state name specified by **state-string** remains the current state until explicitly changed by a subsequent keystroke whose definition includes a **state-string**. If clear, the state name specified by **state-string** remains in effect only for the next defined key stroke.
SMG$V_KEY_PROTECTED (Bit 3)	If set, this bit specifies that this key definition cannot be modified or deleted. If clear, the key definition can be modified or deleted.

The remaining bits are undefined.

equiv-string

VMS Usage: **char_string**
type: **character string**
access: **write only**
mechanism: **by descriptor**

The character string into which is written the equivalence string for the next key definition. The **equiv-string** argument is the address of a descriptor pointing to the storage into which the equivalence string is written.

state-string

VMS Usage: **char_string**
type: **character string**
access: **write only**
mechanism: **by descriptor**

A string into which is written the new state name, if any, which is set by the next key definition. The **state-string** argument is the address of a descriptor pointing to the storage into which the state name is written. If this key definition sets a state, the attributes flag SMG$V_KEY_SETSTATE is set.

DESCRIPTION

SMG$LIST_KEY_DEFS, when called repeatedly, lets you examine all the definitions in a key table.

CONDITION VALUES RETURNED

SS$_NORMAL	Normal successful completion.
SMG$_INVKTB_ID	Invalid **key-table-id**.
SMG$_NOMOREKEYS	No more keys in this table.

Any condition value returned by LIB$COPY_DXDX.

SMG$LOAD_KEY_DEFS—Load Key Definitions

SMG$LOAD_KEY_DEFS loads a file of key definitions (DEFINE/KEY commands) into a specified key table.

FORMAT

SMG$LOAD_KEY_DEFS *key-table-id ,filespec [,default-filespec] [,lognam-flag]*

RETURNS

VMS Usage: **cond_value**
type: **longword (unsigned)**
access: **write only**
mechanism: **by value**

ARGUMENTS

key-table-id

VMS Usage: **longword_unsigned**
type: **longword (unsigned)**
access: **read only**
mechanism: **by reference**

Specifies the key table into which you are loading key definitions. The **key-table-id** argument is the address of an unsigned longword that contains the key table identifier.

Key-table-id is returned by SMG$CREATE_KEY_TABLE.

filespec

VMS Usage: **char_string**
type: **character string**
access: **read only**
mechanism: **by descriptor**

String containing the file specification for the file of DEFINE/KEY commands. The **filespec** argument is the address of a descriptor pointing to the file specification.

default-filespec

VMS Usage: **char_string**
type: **character string**
access: **read only**
mechanism: **by descriptor**

String containing the default file specification for the file of DEFINE/KEY commands. The **default-filespec** argument is the address of a descriptor pointing to the default file specification. If omitted, the null string is used.

KNOWN PROBLEMS AND RESPONSES

OPERATING SYSTEM: VAX/VMS V4.1 Seq. 5.20.18
PRODUCT: VAX/VMS
COMPONENT: SYS

Privileged image access to message files

PROBLEM
STATEMENT

A privileged image cannot gain access to an installed message file as shown in the example:

```
$ message /file_name=sys$disk:[]pl7incmsg spr
$ pli sprmain
$ link /notrace sprmain,spr
$ message /nosymbols spr
$ link /notrace /shareable=pl7incmsg spr
$ run sprmain

%INCYTE-F-ALREADYALLOC, terminal already allocated to the
    INCYTE monitor process

$ mcr install sys$disk:[]sprmain /privilege=world
$ mcr install sys$disk:[]pl7incmsg
$ run sprmain

%NONAME-F-NOMSG, Message number 0801800C
```

RESPONSE

When a process is running an image installed with privilege, the image activator behaves differently than when it is running unprivileged images. There are two parts to this behavior. All images must be installed. (There is no need for any privileges or other attributes of known images. All that is required is that the system manager or other privileged user pass judgment on the image in question.) In addition, the image activator tells RMS that only "trusted" logical names are to be used when RMS is

performing the file lookup on the image file. Trusted logical names are names created with an associated access mode of EXEC or KERNEL.

The previous example can be modified in several ways so that the message is displayed by an image running with privilege.

- The message image P17INCMSG.EXE can be placed in the SYS$MESSAGE directory.

  Modify the file specification in the MESSAGE command from:

  ```
  MESSAGE /FILE_NAME=SYS$DISK:[]P17INCMSG SPR
  ```

  to:

  ```
  MESSAGE /FILE_NAME=P17INCMSG SPR
  ```

  and place an EXEC mode logical name called P17INCMSG in the system name table that locates the message file P17INCMSG.EXE.

- Also, place the logical name for P17INCMSG in another shared or private logical name table. This requires modification of the name LNM$FILE_DEV. This name usually has two translations. An EXEC mode name points only to the system name table. A supervisor mode name points to the process, job, group, and system tables. Also, create an EXEC mode logical name that includes the table containing P17INCMSG.

- Another option is to create an executive mode name for SYS$DISK and suitably modify LNM$FILE_DEV. (Note that we do not recommend putting a modified SYS$DISK logical name into the system name table.)

Of these options, the first two are the simplest. The third option, while a little more complicated, is probably more flexible and reduces the interaction between this application and other parts of the system. We do not recommend explicit use or manipulation of the name SYS$DISK.

OPERATING SYSTEM: VAX/VMS V4.1 Seq. 5.20.19
PRODUCT: VAX/VMS
COMPONENT: SYS

GETLKI mishandled user buffer overflow

PROBLEM
STATEMENT

The system service $GETLKI does not report user buffer overflow as documented for item codes LKI$_LOCKS, LKI$_BLOCKEDBY, and LKI$_BLOCKING. In all of these cases, bit 31 of the returned length value is not set when the user-supplied buffer is too small to hold the requested data. In the case of LKI$_LOCKS for a locally mastered lock, the entire returned length longword is invalid.

RESPONSE

We expect that a fix in an update after VAX/VMS Version 4.4 will partially correct the LKI$LOCKS case so that it behaves as the other cases listed above, i.e., the returned length longword is as documented, except that bit 31 is never set.

The complete fix will appear in a future release of VAX/VMS.

Until the bit 31 problem is corrected, we offer the following suggestion for determining if the user buffer size is inadequate:

> The user buffer size might be inadequate if the sum of the low word of the returned length and the high word of the returned length is greater than the size of the user buffer supplied.

OPERATING SYSTEM: VAX/VMS V4.1 Seq. 5.20.20
PRODUCT: VAX/VMS
COMPONENT: SYS SWAPPER

SWAPPER trims working sets unnecessarily

PROBLEM
STATEMENT

When the swapper is invoked because of a lack of balance set slots, processes are trimmed back to quota before one is swapped. This is not necessary if there are sufficient free pages.

RESPONSE

Under these circumstances, the swapper should check whether there are sufficient free pages before trimming.

We expect to eliminate the unnecessary trimming in a future update of VAX/VMS.

OPERATING SYSTEM: VAX/VMS V4.1 Seq. 11.15.4
PRODUCT: VAX/VMS
COMPONENT: LOGINOUT

Filter line feeds out of password

PROBLEM
STATEMENT

When LOGIN reads the user's password, line-feed characters are not filtered out of the characters read. This results in spurious password failures.

RESPONSE

The VMS terminal service is not designed to deal with terminals that send line-feed characters after return. As a result, anomalous behavior can result in various cases. When line editing is enabled, the line-feed character is interpreted as a delete word command, and therefore, is harmlessly swallowed when it appears at the beginning of a line. However, line editing is disabled during noecho reads (for example, during the reading of the user's password), and therefore, the line-feed character is allowed to come through.

Although this is a general terminal service problem, it makes sense to make a special case correction in LOGIN because of the line-editing filtering applied in other cases.

This problem is fixed in Version 4.4.

OPERATING SYSTEM: VAX/VMS V4.2
PRODUCT: VAX/VMS
COMPONENT: LOGINOUT

Seq. 11.15.5

Low byte limit crashes system

PROBLEM
STATEMENT

Setting a user's BYTLM field to a very small value (for example, 100) causes the system to crash when a user attempts to log in.

RESPONSE

Critical VMS functions stop working when certain process quotas are reduced below minimum reasonable values. In this example, a BYTLM of 100 is too small to permit the process to issue a QIO function to the file system. As a result, it becomes impossible to close the various open files when LOGINOUT attempts to exit after having set up the user's quotas. The failure to close a file at image rundown is the event that triggers the FILCNTNONZ bugcheck. This is a fatal condition because if rundown cannot close a file, the file remains open indefinitely in the system context with no process to account for it.

This problem is fixed in VAX/VMS Version 4.4.

OPERATING SYSTEM: VAX/VMS V4.1 Seq. 11.30.2
PRODUCT: VAX/VMS
COMPONENT: SYSBOOT

SYSBOOT might mistakenly lower PQL_DWSQUOTA

PROBLEM
STATEMENT

SYSBOOT should calculate a new value for PQL_DWSDEFAULT based on interactions with other SYSGEN parameters as described in the VAX/VMS System Generation Utility Reference Manual. When it is necessary to change this value, the new value should also be used for PQL_DWSQUOTA ensuring that PQL_DWSQUOTA is being raised, not lowered.

RESPONSE

We expect to fix this problem in a future update of VAX/VMS.

OPERATING SYSTEM: VAX/VMS V4.2 Seq. 15.15.5
PRODUCT: VAX/VMS
COMPONENT: JOBCTL

SHOW ACCOUNTING reports enabled when disabled

PROBLEM
STATEMENT

If accounting is disabled by the job controller because a write operation failed, the Show Accounting Utility (SHOW ACCOUNTING) does not reflect the new (disabled) state of accounting.

RESPONSE

The job controller disregarded the value which SHOW ACCOUNTING used to determine whether accounting was enabled or disabled.

This problem is fixed in VAX/VMS Version 4.4.

OPERATING SYSTEM: VAX/VMS V4.1 Seq. 15.30.17
PRODUCT: VAX/VMS
COMPONENT: PRTSMB

Virtual memory used by symbiont increases

PROBLEM
STATEMENT

Each time the print symbiont processes a file, it allocates virtual memory used to store internal data structures associated with the file, but does not deallocate the virtual memory when finished.

RESPONSE

This problem is fixed in VAX/VMS Version 4.4.

OPERATING SYSTEM: VAX/VMS V4.2 Seq. 15.30.18
PRODUCT: VAX/VMS
COMPONENT: PRTSMB

Extra form feeds on printer setup

PROBLEM
STATEMENT

Extra blank pages are generated by the print symbiont when a setup or reset sequence is specified for the current print job.

RESPONSE

In VAX/VMS Version 4.2, it is possible to create library setup/reset modules which are output to the device during the processing of the current print job. Setup/reset modules might be output before a specific file, before all files, or after the current job is completed. Device-control library modules that insert printable text are followed by a form feed. No form feed is inserted after a recognized escape sequence, device control sequence, or operating system specific command string.

We realize that certain limitations are imposed for output devices that require control sequences in the ASCII range of printable characters. Certain limitations might also exist for those devices that allow the user to reposition output to the top-of-page after inserting printable text. We believe this area of the symbiont might require additional flexibility beyond that which is currently provided. We are presently investigating mechanisms that would allow such flexibility.

OPERATING SYSTEM: VAX/VMS V4.1 Seq. 20.5.9
PRODUCT: VAX/VMS
COMPONENT: DCL

NOECHO data in recall list

PROBLEM
STATEMENT

In a command procedure, when terminal echo is disabled via SET TERMINAL/NOECHO, data entered into DCL variables via INQUIRE DATA is entered into the recall buffer. This data can be viewed by using the up-arrow function.

Data entered when echo has been disabled should not be entered into the recall list.

RESPONSE

This problem is fixed in VAX/VMS Version 4.4.

OPERATING SYSTEM: VAX/VMS V4.1 Seq. 25.65.2
PRODUCT: VAX/VMS
COMPONENT: RTPAD

TOPS-20 terminal pause character not reassignable

PROBLEM
STATEMENT

When a user logs into a VAX/VMS Version 4.n system and issues a SET HOST command to a TOPS-20 Version 6.1 system, setting the terminal pause character on the TOPS-20 system causes the RTPAD image to exit with a reserved operand fault when the following command is issued:

TERMINAL PAUSE CHARACTER

RESPONSE

Although we do not plan to allow the user to reassign the terminal pause character when connected to a TOPS-20 system, we do expect to correct the image exit problem in a future update of VAX/VMS after Version 4.4.

OPERATING SYSTEM: VAX/VMS V4.3 Seq. 25.65.3
PRODUCT: VAX/VMS
COMPONENT: RTPAD

Terminal characteristics not restored

PROBLEM
STATEMENT

When a user issues a SET HOST command from a machine running VAX/VMS Version 4.3 and subsequently logs off the remote node, terminal characteristics altered by the remote session are not restored to their original state.

RESPONSE

Currently, terminal characteristics are not restored after a remote session. This is a reasonable suggestion, and we will consider changing this behavior in a future update of VAX/VMS.

OPERATING SYSTEM: VAX/VMS V4.2 Seq. 25.65.4
PRODUCT: VAX/VMS
COMPONENT: RTPAD

Remote SET TERMINAL/PERMANENT might fail

PROBLEM
STATEMENT

If a user has SET HOST from a VAX/VMS system to a remote VAX/VMS system and issues the DCL command SET TERMINAL/PERMANENT in combination with any other qualifier, the command may or may not work, depending on the user's privileges on both the local and remote nodes.

1. If the user has LOG_IO or PHY_IO privileges on both the local and remote nodes, the command executes properly.

2. If the user does not have the proper privileges on the remote node, the command terminates with the error message:

   %SYSTEM-F-NOPRIV, no privilege for attempted operation

3. If the user has proper privileges on the remote node, but lacks those privileges on the local node, the command terminates with an insufficient privilege error message, as well as:

   %REM-E-QIOERR, Internal QIO error

RESPONSE

Although LOG_IO or PHY_IO will always be required on both local and remote nodes in order to issue the SET TERMINAL/PERMANENT command, we expect to eliminate the REM-E-QIOERR error message in a future update of VAX/VMS.

OPERATING SYSTEM: VAX/VMS V4.1 Seq. 25.65.5
PRODUCT: VAX/VMS
COMPONENT: RTPAD

TOPS-10 to VMS protocol error

PROBLEM
STATEMENT

When a user performs a SET HOST from a machine running VAX/VMS Version 4.0 to a remote node running TOPS-10 Version 7.03, the connection terminates with the following error message:

%REM-E-PROTERR, internal protocol error

RESPONSE

This problem was fixed in VAX/VMS Version 4.2 and in TOPS-10 Version 7.03.

OPERATING SYSTEM: VAX/VMS V4.1 Seq. 31.55.2
PRODUCT: VAX/VMS
COMPONENT: TMDRIVER

End-of-file not recognized on TE16

PROBLEM
STATEMENT

The SENSEMODE function for a TE16 tape drive fails to sense the MT$M_EOF bit when a 1600-bpi tape is positioned on a tape mark. The SENSEMODE function works properly for tapes written at 800 bpi.

RESPONSE

This incorrect behavior occurs because there is a problem in the TM03 tape formatter which controls TE16 and TU77 tape units.

If an I/O function causes tape motion that ends on a tape mark, the MT$M_EOF bit is properly set. However, if the next I/O function causes no tape motion (a SENSEMODE, for example), and the tape is written at 1600 bpi, the tape mark information is erroneously cleared and the MT$M_EOF bit is not set.

This problem will be fixed in a future update of VAX/VMS after Version 4.4.

OPERATING SYSTEM: VAX/VMS V4.1 Seq. 33.5.3
PRODUCT: VAX/VMS
COMPONENT: CTDRIVER

Out-of-band character not checked

PROBLEM
STATEMENT

If a user does a SET HOST to a remote machine running VAX/VMS Version 4.2, runs an image on that remote node which declares CTRL/Y an out-of-band character, and types a CTRL/Y character, CTDRIVER delivers a CTRL/Y AST even if IO$M_INCLUDE is not set for that character.

RESPONSE

CTDRIVER, the remote terminal driver, does not check whether CTRL/Y or CTRL/C is supposed to be included in the data stream when those characters are declared out-of-band; it delivers the associated attention ASTs, regardless.

In a future update of VAX/VMS after Version 4.4, we plan to modify CTDRIVER to screen control characters according to the same rules that TTDRIVER follows.

OPERATING SYSTEM: VAX/VMS V4.1 Seq. 33.20.11
PRODUCT: VAX/VMS
COMPONENT: TTDRIVER

Secondary transmitted signal not set on DMF-32

PROBLEM
STATEMENT

The VAX/VMS I/O User's Reference Manual, Part I, states that the secondary transmitted data signal may be set via the set modem function modifier on $QIO. This is normally pin 14 according to the RS-232 standard. However, on a DMF-32 controller tests have shown that pin 19, Secondary Request to Send, is actually activated.

RESPONSE

Because the DMF-32 does not provide the secondary transmitted data signal, the driver sets Secondary Request to Send instead. The desired results can be obtained by using a jumper cable between pins 14 and 19.

The VAX/VMS I/O User's Reference Manual, Part I, which notes the difference in operation for this controller, is fixed in VAX/VMS Version 4.4.

OPERATING SYSTEM: VAX/VMS V4.0 Seq. 34.16.2
PRODUCT: VAX/VMS
COMPONENT: LCDRIVER

LCDRIVER causing system crashes

PROBLEM
STATEMENT

VAX/VMS Version 4.0, 4.1, and 4.2 systems might crash after a powerfail. The crash might occur if the VAX is equipped with a DMF-32 and battery backup. Further investigation shows that the printer port of the DMF-32 must be in use at the time of the powerfail for the system crash to occur.

This problem was corrected in the replacement LCDRIVER on the VAX/VMS Version 4.3 update kit. In addition, SPR kits were produced containing the replacement LCDRIVER for use on VAX/VMS Version 4.0, 4.1, and 4.2 systems. Upon installing the kits, customers reported that tab expansion was no longer exhibited on printers connected to the printer port of the DMF-32. It was determined that the output device is not the point of failure.

RESPONSE

The tab expansion problem associated with installing the replacement LCDRIVER occurs only on systems using a DMF-32 with microcode revision level earlier than 4K28. Tab expansion is not performed in the LCDRIVER. Rather, tab expansion is performed by the DMF-32 microcode. The replacement LCDRIVER distributed to correct problems after powerfail includes bit-sensing changes. These changes are required to support modifications included in version 4K28 of the DMF-32 microcode.

VAX/VMS Versions 4.0 and 4.1 do not reflect the correct system definitions for tab expansion and line truncation. Consequently, the DCL commands SET PRINTER/TAB and SET PRINT/TRUNCATE do not perform as expected in the VAX/VMS Versions 4.0 and 4.1 when the replacement LCDRIVER is used. Customers must update to Version 4.2 to take advantage of the correct system definitions for these printer characteristics.

The following checklist describes the requirements for correcting problems with tab expansion, truncation, and powerfail associated with the DMF-32 and the VAX/VMS operating system prior to Version 4.2.

1. VAX/VMS Version 4.2 must be installed on the system.

2. The latest level of DMF-32 microcode must be installed. This might require DMF-32 hardware replacement. (Diagnostics should be performed to ensure that the microcode level equals or exceeds revision level 4K28.)

3. The replacement SPR kit for the LCDRIVER distributed for VAX/VMS Version 4.2 must be installed on the system. This requires that the system be rebooted.

The following action item checklist describes the requirements for correcting problems with tab expansion and truncation associated with the DMF-32 and the VAX/VMS Version 4.3 operating system.

1. VAX/VMS Version 4.3 or later must be installed on the system.

2. The latest level of DMF-32 microcode must be installed. This might require DMF-32 hardware replacement. (Diagnostics should be performed to ensure that the microcode level equals or exceeds revision level 4K28.)

OPERATING SYSTEM: VAX/VMS V4.1 Seq. 34.20.2
PRODUCT: VAX/VMS
COMPONENT: LPDRIVER

Uppercase character support

PROBLEM
STATEMENT

The line printer attached to an LP11 controller does not convert certain characters to their respective uppercase equivalents. The opening brace character ({) and the closing brace character (}) are not properly converted to uppercase character equivalents: the opening bracket ([) and the closing bracket (]).

RESPONSE

We expect to fix this problem in a future update of VAX/VMS after Version 4.4.

OPERATING SYSTEM: VAX/VMS V4.1 Seq. 40.45.19
PRODUCT: VAX/VMS
COMPONENT: RMS

Long UICs truncated over network access

PROBLEM
STATEMENT

RMS does not correctly fill in the UIC field in the protection XAB if the file is accessed on a remote DECnet node. Only the lower word of the group and member fields is supplied.

RESPONSE

Both RMS and the file access listener (FAL) were incorrectly formatting the UIC field prior to transmitting it to the remote system. This was fixed in VAX/VMS Version 4.3.

OPERATING SYSTEM: VAX/VMS V4.1 Seq. 40.45.20
PRODUCT: VAX/VMS
COMPONENT: RMS

RMS record lock conversion problems

PROBLEM
STATEMENT

Manual record locking does not appear to work as expected under the following circumstances:

> A user executes a $FIND, locking the record for read, allowing readers. The same user then executes a $GET on the same record, locking it for exclusive access. At this point, a second user can still execute a $FIND on the record.

RESPONSE

If the user currently holding a lock on a record in a file attempts to change the mode of that record lock, RMS ignores the request. For instance, if an attempt is made to change a currently held record lock from READ to exclusive, which is what the user is attempting in the above example, RMS returns successfully without altering the current record lock.

This problem is fixed in VAX/VMS Version 4.4.

OPERATING SYSTEM: VAX/VMS V4.2 Seq. 40.45.21
PRODUCT: VAX/VMS
COMPONENT: RMS

RMS fails with RMS$_ENQ/SS$_CVTUNGRANT

PROBLEM
STATEMENT

A program that is accessing a shared file using extensive asynchronous multi-streamed record operations fails with an error status of RMS$_ENQ and an STV code of SS$_CVTUNGRANT indicating an attempt to convert an ungranted lock.

RESPONSE

This problem is fixed in VAX/VMS Version 4.4.

OPERATING SYSTEM: VAX/VMS V4.1 Seq. 45.1.3
PRODUCT: VAX/VMS
COMPONENT: RTL

Embedded blanks not permitted in UICs

PROBLEM
STATEMENT

The Disk Quota Utility (DISKQUOTA) does not recognize certain forms of symbolic UIC expressions that are recognized correctly by other commands and utilities.

RESPONSE

This problem is caused by the system's central UIC and identifier parsing logic which does not permit embedded blanks in the UIC expression. In all commands and utilities other than DISKQUOTA, the command processing strips the blanks out of the command line, masking the problem.

This problem is fixed in VAX/VMS Version 4.4.

OPERATING SYSTEM: VAX/VMS V4.0 Seq. 55.5.3
PRODUCT: VAX/VMS
COMPONENT: ANALYZE/DISK

Recovered files have incorrect backlinks

PROBLEM
STATEMENT

Files recovered to [SYSLOST] by VERIFY have incorrect backlinks.

RESPONSE

VERIFY will be fixed to set the backlinks correctly in a future update of VAX/VMS

OPERATING SYSTEM: VAX/VMS V4.1 Seq. 55.5.4
PRODUCT: VAX/VMS
COMPONENT: ANALYZE/ERROR_LOG

Errors during bootstrap log incorrect date/time

PROBLEM
STATEMENT

The report generated by Version 4.1 of ANALYZE/ERROR_LOG produces an incorrect date of 4-JAN-1978 09:54:55.37.

RESPONSE

ANALYZE/ERROR_LOG is correctly interpreting the date/time that is logged for the entries.

Errors can be logged during the time that the VAX/VMS operating system is booting. The system date/time may or may not have been initialized to the current date/time when the entry was logged.

If an entry is logged before the VAX/VMS operating system sets up the current date/time, the contents of those locations contain a value representing 4-JAN-1978 09:54:55.37.

In a future revision of VAX/VMS, a note will be added to the documentation describing error logging time stamps.

OPERATING SYSTEM: VAX/VMS V4.2 Seq. 55.5.5
PRODUCT: VAX/VMS
COMPONENT: ANALYZE/ERROR

Analyzing errors for RA81 disk

PROBLEM
STATEMENT

When trying to analyze disk errors on an RA81, ANALYZE/ERROR_LOG gets an access violation and causes a forced image exit.

RESPONSE

This problem was corrected in VAX/VMS Version 4.3.

OPERATING SYSTEM: VAX/VMS V4.2 Seq. 55.5.6
PRODUCT: VAX/VMS
COMPONENT: ANALYZE/ERROR

/INCLUDE & /EXCLUDE keyword values misinterpreted

PROBLEM
STATEMENT

ANALYZE/ERROR_LOG/EXCLUDE=(VOLUME_CHANGES,CONTROL_ENTRIES,TAPES) does not function as documented. Report output is not produced if certain combinations of keywords are used in the /INCLUDE and /EXCLUDE qualifier value. If a combination of VOLUME with either a device selection or a device class selection is used in the lists for either /INCLUDE or /EXCLUDE, then not all of the required entries are selected for output.

For example, when /INCLUDE = (VOLUME_CHANGES,DISKS) or /INCLUDE = (VOLUME_CHANGES,TAPES) is specified for ANALYZE/ERROR_LOG, the volume entries are output; however, neither the disk nor the tape error entries is output. The order in which the keywords are specified has no impact.

If either /EXCLUDE = (VOLUME_CHANGES,TAPES) or /EXCLUDE = (VOLUME_CHANGES,DISKS) is specified to ANALYZE/ERROR_LOG, the volume entries are not output, but the disk and tape error entries are output inappropriately.

If the keywords are specified individually, they work as documented. Problems occur only when both keywords are specified for /INCLUDE or /EXCLUDE.

RESPONSE

This problem will be corrected in a future update of VAX/VMS.

OPERATING SYSTEM: VAX/VMS V4.2 Seq. 55.50.9
PRODUCT: VAX/VMS
COMPONENT: DEBUG

Debugger reserved operand fault while using PL/I

PROBLEM
STATEMENT

If the debugger is used to step over a PL/I function that returns a character string, a reserved operand fault might occur.

RESPONSE

This behavior stems from an incorrect interaction between the way the debugger implements STEP/OVER and the way PL/I implements functions that return character strings. Specifically, the debugger implements STEP/OVER by using the hardware T-bit to enter the routine, modifying the stack so that a reserved operand fault occurs on the return, and trapping that reserved operand fault. However, in some cases, PL/I moves stack frames in such a way that the debugger no longer recognizes the reserved operand fault as being the one that it caused.

This problem is fixed in VAX/VMS Version 4.4.

OPERATING SYSTEM: VAX/VMS V4.2 Seq. 56.30.11
PRODUCT: VAX/VMS
COMPONENT: MAIL

MAIL ATTACH/PARENT command fails

PROBLEM
STATEMENT

The ATTACH/PARENT command in the Mail Utility (MAIL) causes an image-forced exit if the UIC of the parent process does not match the default UIC, as specified by the UAF entry for the account.

RESPONSE

This problem was fixed in VAX/VMS Version 4.3.

OPERATING SYSTEM: VAX/VMS V4.2 Seq. 56.30.12
PRODUCT: VAX/VMS
COMPONENT: MAIL

Remote forwarding can cause MAIL to hang

PROBLEM
STATEMENT

The MAIL prompt never returns to the user who is sending MAIL to two recipients on a remote node if one remote recipient has his mail forwarded to the other recipient.

Under the following circumstances, when a user sends mail on node NODEA:

```
$ SET PROCESS/PRIVILEGE=SYSNAM
$ MAIL
MAIL> SET FORWARD user2/USER=user1
```

and a user on node BAR attempts to send a message to addressees on node NODEA, as follows, MAIL never returns control to the user.

```
$ MAIL
MAIL> SEND SYS$LOGIN:LOGIN.COM
To:   NODEA::USER1,NODEA::USER2
Subj: The MAIL utility never returns to the MAIL> prompt
```

RESPONSE

To correct this problem, it is necessary to modify the protocol MAIL uses to send remote messages. At this time, this restriction remains; we will consider changing the protocol in a future major release of VAX/VMS.

OPERATING SYSTEM: VAX/VMS V4.1 Seq. 56.80.9
PRODUCT: VAX/VMS
COMPONENT: SET HOST/DTE

SET HOST/DTE/LOG is inaccurate

PROBLEM
STATEMENT

SET HOST/DTE/LOG does not accurately record the terminal session, specifically:

1. Blank lines are missing in the log file.

2. Recording ends too early - the logout line is omitted.

3. Lines that are supposed to be overprinted are recorded as separate lines.

RESPONSE

Problem 1 is fixed in VAX/VMS Version 4.4.

Problem 2 will be corrected in a future update of VAX/VMS.

It is unlikely that problem 3 will be corrected in the near future since implementation will require a new file format. We will, however, consider this suggestion for a future release of VAX/VMS.

OPERATING SYSTEM: VAX/VMS V4.0 Seq. 56.80.10
PRODUCT: VAX/VMS
COMPONENT: SET TERMINAL

SET TERMINAL/INQUIRE resets multinational

PROBLEM
STATEMENT

The SET TERMINAL/INQUIRE command, when issued on a VT200-series terminal, changes the setup NATIONAL to MULTINATIONAL.

RESPONSE

When a VT200-series terminal is detected, SET TERMINAL/INQUIRE sends out escape sequences to ensure that the device is in the correct state for 8-bit characters and 7-bit control sequences. These sequences cause a soft reset of the terminal; a soft reset is an operation that occurs in the microcode of the device. This soft reset is setting NATIONAL to MULTINATIONAL. Unfortunately, there is no way for SET TERMINAL/INQUIRE to avoid the effect of this reset or to change it afterwards. Therefore, we suggest that you either avoid the use of SET TERMINAL/INQUIRE or immediately correct your setup following its issue.

OPERATING SYSTEM: VAX/VMS V4.1 Seq. 56.85.7
PRODUCT: VAX/VMS
COMPONENT: SHOW QUEUE

Description truncated in SHOW QUEUE/FORM/FULL

PROBLEM
STATEMENT

The output of the DCL command SHOW QUEUE/FORM/FULL does not show the entire 255-character description.

RESPONSE

Although the job controller stores and returns the entire message in the queue file, the DCL command SHOW QUEUE only displays the first 34 characters. We will consider your suggestion in a future functional update of VAX/VMS.

OPERATING SYSTEM: VAX/VMS V4.1 Seq. 65.5.41
PRODUCT: VAX/VMS
COMPONENT: DOCUMENTATION

Valid values for SET TERMINAL/WIDTH

PROBLEM
STATEMENT

Both the VAX/VMS DCL Dictionary and the HELP text state that SET TERMINAL/WIDTH = n accepts values n = 0 to 255. In fact, SET TERMINAL/WIDTH accepts values in the range 1 to 511.

RESPONSE

We expect to fix this error in future revisions of the VAX/VMS DCL Dictionary and the HELP text.

OPERATING SYSTEM: VAX/VMS V4.2 Seq. 65.5.42
PRODUCT: DECNET
COMPONENT: DOCUMENTATION

Running remote images requires READ access

PROBLEM
STATEMENT

Using the DCL command RUN to execute an image over the DECnet network with EXECUTE access to the image file fails.

RESPONSE

To provide a secure computing environment, READ access is required to execute an image across the network. This fact was was not clearly stated in the description for the RUN command. This information will be emphasized in a future revision of the VAX/VMS DCL Dictionary.

OPERATING SYSTEM: VAX/VMS V4.2 Seq. 65.5.43
PRODUCT: VAX/VMS
COMPONENT: DOCUMENTATION

Documentation error for QUEUE_IDLE bit in GETQUI

PROBLEM
STATEMENT

The documentation for the QUI$V_QUEUE_IDLE flag of item code QUI$_QUEUE_STATUS in system service $GETQUI states:

Queue contains no job requests

This implies that if the bit is set, the queue in question has no jobs. However, this is not how $GETQUI interprets the bit.

RESPONSE

The documentation is misleading. It should read:

Queue contains no executing jobs

This statement will be corrected in a future revision of the documentation.

OPERATING SYSTEM: VAX/VMS V4.2 Seq. 65.5.44
PRODUCT: VAX/VMS
COMPONENT: DOCUMENTATION

SET PROTECTION cannot modify a remote file

PROBLEM
STATEMENT

The DCL command SET PROTECTION does not behave as expected when using a DECnet node name in the file specification. An error message is returned indicating an invalid file specification.

RESPONSE

It is not intended that either DCL command SET PROTECTION or SET FILE/PROTECTION modify a file if the specification includes a node name.

This restriction will be documented under both commands in a future revision of the VAX/VMS DCL Dictionary.

CUMULATIVE INDEX

VAX/VMS SYSTEMS DISPATCH
CUMULATIVE INDEX FOR VAX/VMS V4.n
JULY 1986

Following is a cumulative listing of articles for VAX/VMS V4.n and layered products.

The following list is designed so that in future issues it can be expanded. Consequently, there are several numbers "reserved" for that purpose. Also, within each category the numbering scheme allows for expanding the primary category to include related subsets. For example, under 55.0, Utilities, 55.35 is used for the COPY utility, 55.60 is used for the DIFFERENCES utility, etc. Periodically, the components list is reviewed to insure that it accommodates the current software needs.

R = indicates a republished article
F = indicates problem was fixed in one of the Versions between 4.0 and 4.4

Component/ Product	Sequence Number	Title of Article	Operating System	Mon/Yr
	1.0	NEWS BULLETIN SECTION		
NEWS BULLETIN	1.1.1	IMPORTANT VAX/VMS VERSION 4.2 INFORMATION	V4.2	Sep 85
	1.1.2	IMPORTANT VAX/VMS VERSION 4.2 INFORMATION	V4.2	Nov 85
	1.1.3	IMPORTANT VAX/VMS VERSION 4.2 INFORMATION	V4.2	Nov 85
	1.1.4	PATCH KIT FAILS TO INSTALL AFTER VERSION 4.2 UPGRADE	V4.2	Mar 86
	1.1.5	PROBLEM IN VAX/VMS DATA ENCRYPTION FACILITY		Mar 86
	1.1.6	IMPORTANT VAX/VMS VERSION 4.n INFORMATION	V4.n	May 86
	1.1.7	RUN-TIME LIBRARY DOCUMENTATION CORRECTION	V4.4	Jul 86
	5.0	EXECUTIVE & SYSTEM SERVICES SECTION		
IMAGE ACTIVATOR	5.5.1	IMAGE INSTALLED AS /SHARE REQUIRES WORLD:R ACCESS	V4.0	Nov 85 F
SYS	5.20.1	F$GETDVI INFORMATION INVALID IF DISK NOT MOUNTED	V4.0	Jul 85
	5.20.2	EXCESSIVE MODIFIED PAGE LIST WRITING	V4.0	Jul 85
	5.20.3	GETJPI PROC_INDEX VALUE	V4.0	Jul 85
	5.20.4	SHUTDOWN WITH REBOOT_CHECK CAN FAIL	V4.0	Jul 85 F
	5.20.5	TODR DEFINITION REMOVED IN VAX/VMS VERSION 4.0	V4.0	Jul 85 F
	5.20.6	SCREEN MANAGEMENT SYMBOLS DEFINED INCORRECTLY	V4.0	Jul 85 F
	5.20.7	TEMPORARY MAILBOX LOGICAL NAMES	V4.0	Jul 85
	5.20.8	LACK OF DISK QUOTA CAUSES ERRFMT TO FAIL	V4.0	Sep 85
	5.20.9	GETJPI ("","TERMINAL") TRUNCATES NAMES	V4.0	Sep 85 F
	5.20.10	CANNOT ALLOCATE OFFLINE DEVICE	V4.0	Nov 85 F
	5.20.11	DETACHED PROCESSES FAIL TO ACTIVATE	V4.1	Nov 85
	5.20.12	MISSING .EXTERNAL DIRECTIVE IN $FAO_S MACRO	V4.0	Nov 85
	5.20.13	F$LOGICAL AND USER-CREATED NAME TABLES	V4.0	Nov 85
	5.20.14	RSX.EXE AND IMAGE ACCOUNTING	V4.1	Jan 86
	5.20.15	MAILBOXES AND LOGICAL NAMES	V4.0	Mar 86
	5.20.16	CLUSTER $BRKTHRU FUNCTION	V4.1	May 86
	5.20.17	P1V PARAMETER DOES NOT FUNCTION CORRECTLY	V4.1	May 86 F

Component/ Product	Sequence Number	Title of Article	Operating System	Mon/Yr
	5.20.18	PRIVILEGED IMAGE ACCESS TO MESSAGE FILES	V4.1	Jul 86
	5.20.19	GETLKI MISHANDLED USER BUFFER OVERFLOW	V4.1	Jul 86
	5.20.20	SWAPPER TRIMS WORKING SETS UNNECESSARILY	V4.1	Jul 86
	7.0	SYSTEM LIBRARIES SECTION		
STARLET	7.30.1	EXAMPLE PROGRAM GETS LINK ERRORS	V4.1	Nov 85

TOP

Component/ Product	Sequence Number	Title of Article	Operating System	Mon/Yr
	10.0	SYSTEM MANAGEMENT, OPERATIONS & SECURITY SECTION		
ACCOUNTING	10.5.1	PROBLEMS WITH ACCOUNTING SELECTION BY UIC	V4.0	Jul 85 F
	10.5.2	USER RECORD DISPLAYS SCROLL OFF SCREEN	V4.0	Jul 85 F
	10.5.3	IMAGE NAMES NOT CLEARED IN ACCOUNT/FULL	V4.1	Mar 86 F
STARTUP	10.15.1	TERMINAL LOGICAL NAMES IN UVSTARTUP.COM	V4.0	Sep 85 F
	10.15.2	ERROR IN MicroVMS SYSTARTUP	V4.0	Nov 85 F
	11.0	OPERATIONS SECTION		
LOGINOUT	11.15.1	INCORRECT VALIDATION OF MAXJOBS	V4.0	Sep 85 F
	11.15.2	DEFCLI PROHIBITS CLI TABLE CHANGE IN SPAWN	V4.0	Sep 85
	11.15.3	NETWORK JOBS NOT COUNTED AGAINST MAXJOBS	V4.1	Sep 85
	11.15.4	FILTER LINE FEEDS OUT OF PASSWORD	V4.1	Jul 86
	11.15.5	LOW BYTE LIMIT CRASHES SYSTEM	V4.2	Jul 86
SYSBOOT	11.30.1	TOPSYS SYSTEM ROOT IS INCORRECT	V4.0	Sep 85
	11.30.2	SYSBOOT MIGHT MISTAKENLY LOWER PQL_DWSQUOTA	V4.1	Jul 86
SYSGEN	11.35.1	DISCREPANCY IN SCSNODE NAME LENGTH	V4.0	Jul 85
	11.35.2	LONG FILE SPECIFICATION CORRUPTS DDB	V4.0	Jan 86 F
	11.35.3	WRONG MESSAGE SETTING SYSGEN PARAMETER TOO LOW	V4.1	Jan 86 F
SYSINIT	11.40.1	QUOTA CACHING DISABLED ON THE SYSTEM DISK	V4.0	Jul 85 F
	11.40.2	SYSUAF.DAT REDEFINED FOR BYPASS AT LOGIN	V4.0	Sep 85 F
	11.40.3	DUPLICATE SYSTEM DISK LABEL NAMES PREVENT BOOTING	V4.0	May 86
	12.0	SOFTWARE INSTALLATION SECTION		
UPGRADE	12.10.1	CVTUAF DOES NOT COPY USER DATA AREA	V4.0	Jul 85 F
	12.10.2	VMSINSTAL FAILS DURING VERSION 4.0 UPGRADE ON TU81	V4.0	Jul 85 F
VMSINSTAL	12.15.1	VMIBCKERR.TMP INADVERTENTLY PLACED IN SAVE SET	V4.0	Jul 85 F
	12.15.2	VMSINSTAL GET OPTION FAILS ON VERSION 4 UPDATE	V4.0	Sep 85 F
	12.15.3	VMSINSTAL OPTION G INITIALIZES INCORRECTLY	V4.1	Mar 86 F

Component/ Product	Sequence Number	Title of Article	Operating System	Mon/Yr
	13.0	SECURITY SECTION		
SECURITY	13.5.1	ACL PROTECTION OF GLOBAL SECTIONS	V4.0	Nov 85 F
	15.0	BATCH, PRINT, JOB CONTROLLER SECTION		
JOBCTL	15.15.1	SNDSMB WITH FILESIZ OPTION FAILS	V4.0	Jul 85 F
	15.15.2	JOB CONTROLLER SIGNALS AN INVALID BLOCK ERROR	V4.1	Jan 86 F
	15.15.3	NO PROCESS SLOTS CAUSES JOBCTL TO ABORT	V4.1	Mar 86 F
	15.15.4	SET QUEUE/ENTRY/RELEASE COMMAND WORKS INCORRECTLY	V4.2	May 86 F
	15.15.5	SHOW ACCOUNTING REPORTS ENABLED WHEN DISABLED	V4.2	Jul 86
PRINT	15.25.1	SYMBIONT ISSUES BLANK PAGES WITH /SETUP	V4.0	Jul 85
	15.25.2	SUGGESTION FOR DEFAULT FORM FOR EACH QUEUE	V4.0	Jul 85 F
	15.25.3	PRINT/NOFLAG DOES NOT OVERRIDE /SEPARATE=FLAG	V4.0	Nov 85
PRINT SYMBIONT	15.30.1	HOW TO PRINT HEADERS IN 80-COLUMN FORMAT	V4.0	Jul 85
	15.30.2	UNEXPECTED SYMBIONT PROCESS TERMINATION	V4.1	Jul 85 F
	15.30.3	CANNOT BYPASS ALL FORMATTING IN PRINT SYMBIONT	V4.0	Sep 85 F
	15.30.4	PRINT SYMBIONT ALLOCATES OUTPUT DEVICE	V4.0	Sep 85
	15.30.5	MULTIPLE PAGE HEADERS GENERATED BY PLOT	V4.1	Sep 85
	15.30.6	LOSS OF PRINT JOB WHEN CARRIER IS DROPPED	V4.1	Sep 85
	15.30.7	FILE LEFT OPEN BY PRINT SYMBIONT	V4.1	Sep 85
	15.30.8	IMPLICIT SPOOLING RESTRICTS USER	V4.0	Sep 85
	15.30.9	PRINT SYMBIONT PERFORMS TAB EXPANSION	V4.0	Sep 85 F
	15.30.10	PRINT SYMBIONT PROCESS TERMINATION	V4.1	Sep 85 F
	15.30.11	PRINT SYMBIONT ENTERS COMPUTE LOOP	V4.1	Sep 85 F
	15.30.12	MISCELLANEOUS PROBLEMS IN PRINT SYMBIONT	V4.1	Sep 85 F
	15.30.13	SERIAL PRINTERS ON DMF DISCONNECT	V4.0	Sep 85 F
	15.30.14	PRINTER SUPPORT FOR ESCAPE SEQUENCE CHARACTER	V4.0	Jan 86 F
	15.30.15	PROBLEMS MODIFYING SYMBIONT INPUT FILTER	V4.1	Jan 86 F
	15.30.16	IMPLICIT SPOOLING IS INFLEXIBLE	V4.1	Jan 86
	15.30.17	VIRTUAL MEMORY USED BY SYMBIONT INCREASES	V4.1	Jul 86
	15.30.18	EXTRA FORM FEEDS ON PRINTER SETUP	V4.2	Jul 86
QUEMAN	15.35.1	INCORRECT OPERATION OF SUBMIT/AFTER/PRIORITY	V4.1	Jan 86 F
	20.0	DCL SECTION		
DCL	20.5.1	CAPTIVE ACCOUNT CAUSES LOGINOUT ACCESS VIOLATION	V4.0	Sep 85 F
	20.5.2	CANNOT CHANGE/EXAMINE LOGICAL NAME TABLE PROT	V4.0	Sep 85 F
	20.5.3	LGICMD=NL: DISABLES VERIFICATION	V4.0	Nov 85 F
	20.5.4	RUN/INTERVAL DOES NOT WORK IF TIME > 24 HOURS	V4.1	Nov 85
	20.5.5	CTRL/T TRUNCATES LONG FILE NAMES	V4.1	Nov 85
	20.5.6	LIB$SPAWN ('RUN/DELAY...') DOES NOT WORK	V4.1	Nov 85
	20.5.7	REDEFINING SYS$OUTPUT LOCKS FILE	V4.1	Nov 85
	20.5.8	DATA STREAM NOT TREATED AS INPUT DATA	V4.1	Mar 86
	20.5.9	NOECHO DATA IN RECALL LIST	V4.1	Jul 86

Component/ Product	Sequence Number	Title of Article	Operating System	Mon/Yr
	25.0	DECnet SECTION		
DECnet	25.5.1	NETWORK JOBS USE DEFAULT DCLTABLES	V4.0	Jul 85
	25.5.2	SPURIOUS NODE UNREACHABLE ERRORS	V4.0	Jul 85
	25.5.3	STARTNET.COM INCORRECTLY PARSES NODE ADDRESS	V4.0	Jul 85
	25.5.4	STARTNET.COM FAILS TO CHECK FOR ALTPRI PRIVILEGE	V4.0	Jul 85
	25.5.5	STREAM_LF FILE TRANSFER HANGS TO NON-VMS PARTNERS	V4.0	Sep 85
	25.5.6	DECnet GIVES INCORRECT ERROR ON INVALID USER NAME	V4.1	Sep 85
	25.5.7	PROXY ACCOUNT CHANGE DELAYED	V4.0	Nov 85
	25.5.8	RECEIVE BUFFERS AND STATIC ASYNCHRONOUS LINES	V4.1	Nov 85
	25.5.9	RMS CANNOT ALWAYS PARSE SYS$NET	V4.1	Nov 85
	25.5.10	ACCESS VIOLATION RETURNED ON READ REQUEST	V4.1	Jan 86
	25.5.11	AREAS LEFT UNREACHABLE	V4.1	Jan 86
	25.5.12	ASYNCH LINE OR CIRCUIT PARAMETERS VANISH	V4.2	Mar 86
	25.5.13	INVALID ALARM FROM DECnet	V4.1	Mar 86
	25.5.14	DECnet HANGS UP WHEN TIME IS SET BACK	V4.0	May 86
	25.5.15	NODES IN DIFFERENT AREAS ARE UNREACHABLE	V4.1	May 86
EVL	25.20.1	EVL EXITS WITH RESULTANT STRING OVERFLOW ERROR	V4.1	Nov 85
NCP	25.45.1	NCP SHOW KNOWN LOGGING ACCESS VIOLATION	V4.2	Mar 86 F
RTPAD	25.65.1	CTERM ESCAPE AND CTRL/E ECHOING	V4.1	Jan 86 F
	25.65.2	TOPS-20 TERMINAL PAUSE CHARACTER NOT REASSIGNABLE	V4.1	Jul 86
	25.65.3	TERMINAL CHARACTERISTICS NOT RESTORED	V4.3	Jul 86
	25.65.4	REMOTE SET TERMINAL/PERMANENT MIGHT FAIL	V4.2	Jul 86
	25.65.5	TOPS-10 TO VMS PROTOCOL ERROR	V4.1	Jul 86
	31.0	DISK & TAPE DRIVERS SECTION		
DDDRIVER	31.10.1	TU58 TIMES OUT WHEN /DATA_CHECK=WRITE IS USED	V4.0	Sep 85 F
	31.10.2	VAX-11/750 CONSOLE TU58 OCCASIONALLY TIMES OUT	V4.1	Nov 85
TFDRIVER	31.50.1	INCORRECT POSITION AFTER ERROR RECOVERY	V4.1	May 86
	31.50.2	INCORRECT DENSITY QUALIFIER YIELDS NO ERROR	V4.2	May 86
TMDRIVER	31.55.1	EOT BIT NOT PROPERLY SET IN DEVDEPEND	V4.1	May 86
	31.55.2	END-OF-FILE NOT RECOGNIZED ON TE16	V4.1	Jul 86
TUDRIVER	31.65.1	DENSITY CHANGES ON MULTIVOLUME SET	V4.0	May 86 F
	31.65.2	MULTIVOLUME BACKUP ON TMSCP DRIVES	V4.1	May 86
	32.0	NET DRIVERS SECTION		
NETDRIVER	32.15.1	ACCESS VIOLATION WITH LARGE NETWORK BUFFER	V4.1	Nov 85 F
NODRIVER	32.20.1	DECnet LINES ENTER ON-SYNCHRONIZING STATE	V4.0	Nov 85
XDDRIVER	32.25.1	DEVICE FULL ERROR WHEN INITIALIZING DMP-11	V4.0	Jul 85 F
	32.25.2	XDDRIVER LINK CANCELLATION CRASHES SYSTEM	V4.1	May 86

Component/ Product	Sequence Number	Title of Article	Operating System	Mon/Yr
XEDRIVER	32.30.1	VARIOUS PROBLEMS WITH XEDRIVER	V4.0	Jan 86
	32.30.2	VARIOUS PROBLEMS WITH XEDRIVER	V4.0	Jan 86
YQDRIVER	32.45.1	YQDRIVER CORRUPTS NONPAGED POOL	V4.0	Jul 85 F
	33.0	TERMINAL DRIVERS SECTION		
CTDRIVER	33.5.1	RWAST STATE AFTER DEASSIGN OR HANGUP	V4.1	Jan 86 F
	33.5.2	REMOTE PROCESS ENTERS AN RWAST STATE	V4.1	May 86
	33.5.3	OUT-OF-BAND CHARACTER NOT CHECKED	V4.1	Jul 86
TTDRIVER	33.20.1	VT200 NOT DEFINED IN $DCDEF	V4.0	Jul 85
	33.20.2	DMA NOT SET ON DMF-32 LINES	V4.0	Jul 85
	33.20.3	DMF32 SLOW TO PROCESS XON/XOFF	V4.0	Jan 86 F
	33.20.4	SET TERMINAL/INQUIRE ON VT102	V4.2	Mar 86 F
	33.20.5	TT$M_MBXDSABL IGNORED	V4.0	Mar 86 F
	33.20.6	STATUS RETURN FROM MODEM HANGUP	V4.0	Mar 86
	33.20.7	EXTRA CHARACTERS WITH TIMEOUT READ	V4.1	Mar 86 F
	33.20.8	READ/VERIFY WITH CLEAR CHARACTER FROM FMS	V4.1	Mar 86
	33.20.9	FRAME SIZE CHARACTERISTIC IS NOT SET TO 5	V4.1	May 86 F
	33.20.10	AUTOBAUDING WRITES TO LINE 0	V4.1	May 86 F
	33.20.11	SECONDARY TRANSMITTED SIGNAL NOT SET ON DMF-32	V4.1	Jul 86
YCDRIVER	33.25.1	DMF32 REQUIRES CARRIER	V4.0	Mar 86
	34.0	OTHER DRIVERS SECTION		
LCDRIVER	34.16.1	PRINTER PROBLEMS AFTER POWER FAILURE	V4.0	Nov 85 F
	34.16.2	LCDRIVER CAUSING SYSTEM CRASHES	V4.0	Jul 86
LPDRIVER	34.20.1	SYSTEM-F-EXQUOTA ERROR ON PRINTOUT	V4.0	Jul 85
	34.20.2	UPPERCASE CHARACTER SUPPORT	V4.1	Jul 86
LTDRIVER	34.25.1	LAT SERVER AND DEVICE NAMES UNAVAILABLE	V4.0	Nov 85
	34.25.2	LAT HOST RATING RESTRICTION	V4.1	Jan 86
PADRIVER	34.40.1	CI VIRTUAL CIRCUIT HUNG IN VC_FAIL STATE	V4.1	Jan 86 F
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	40.2.2	ERROR MESSAGE POSITIONING IS INCORRECT	V4.1	Mar 86 F
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- 75.30 MESSAGE ROUTER
- 75.35 MUX200/VAX
- 75.40 VAX BTS

80.0 Data Management

- 80.5 VAX CDD
- 80.10 VAX DATATRIEVE
- 80.15 VAX DBMS
- 80.20 VAX Rdb/VMS

85.0 Languages

- 85.5 VAX Ada
- 85.10 VAX BASIC
- 85.15 VAX BLISS-32
- 85.20 VAX C
- 85.25 VAX COBOL
- 85.30 VAX CORAL 66
- 85.35 VAX DIBOL
- 85.40 VAX FORTRAN
- 85.45 VAX MACRO
- 85.50 VAX PASCAL
- 85.55 VAX PL/1

90.0 Workstations

95.0 Articles of General Interest

100.0 Hardware Related Information

SOFTWARE PROBLEMS OR ENHANCEMENTS

Questions, problems, and enhancements to DIGITAL software should be reported on a Software Performance Report (SPR) form and mailed to the SPR Center at one of the following Digital Offices: *(SPR forms are available from the SPR Center).*

Areas Covered	SPR Center
United States; remainder of Far East, Middle East, Africa Latin America	Corporate Administrative Services Group P.O. Box F Maynard, MA 01754
Canada	Digital Equipment of Canada, Ltd. P.O. Box 13000 Kanata, Ontario Canada, K2K 2A6
United Kingdom, Bahrein, Egypt, Iraq, Jordan, Kuwait, Lebanon, Libya, Qatar, Oman, Saudi Arabia, Syria, United Arab Emirates, Yemen, Arab Republic	Digital Equipment Co. Ltd. 2 Cheapside GB - Reading, Berkshire RG1 7AA England
Australia, New Zealand	Digital Equipment Aust. Pty. Ltd. P.O. Box 384 Chatswood, New South Wales 2067 Australia
Brazil	Digital Equipment Comercio e Industria Ltda. Avenida Augusto Severo, 156-A 20021 Rio de Janeiro, RJ Brazil
Caribbean	Digital Equipment Latin America P.O. Box 11038 Fernandez Juncos Station Santurce 00910 Puerto Rico
France	Digital Equipment France Cidex L225 18 Rue Saarinen F-94528, Rungis France
Italy	Digital Equipment S.p.A. Viale Fulvio Testi, 11 Ang. Via Gorki 105 I-20092 Cinisello Balsamo Milan Italy
Japan	Digital Equipment Corp. Intl. Japan Sunshine 60, P.O. Box 1135 1-1 Higashi Ikebukuro 3-Chome, Toshima-Ku, Tokyo, 170 Japan
Belgium, Holland, Luxemburg	Digital Equipment B.V. Kaap Hoorndreef 38 NL-3563 AV Utrecht Holland

Sweden	Digital Equipment AB P.O. Box 1250 S-17124 Solna 1 Sweden
Denmark	Digital Equipment Corp. AS Kristineberg 3 DK-2100 Copenhagen 0 Denmark
Finland	Digital Equipment Corp. Oy PL 16 SF-02201, Espoo 20 Finland
Norway	Digital Equipment Corp. A/S Pottemakerveien 8 N-Oslo 5 Norway
Austria, East Germany, West Germany, Poland, Hungary, Rumania, Czechoslovkia, Russia, Bulgaria	Digital Equipment Corp. GmbH Rheinstrasse 28 D - 8000 Munich 40 West Germany
Israel	Decsys, Computers Ltd. 4, Yirmiyahu Str. IL-63505 Tel Aviv Israel
Greece, Portugal, Spain, Switzerland, Yugoslavia, (Morocco, Algeria, Tunisia, Cyprus, Turkey, Malta)	Digital Equipment Corp. SA 9, Route des Jeunes Case Postale 191 CH-1211 Geneva 26 Switzerland
Mexico	Digital Equipment de Mexico, S.A. de C.V. Ave. Lopez Mateos 427, 1st. Floor Guadalajara Jalisco Mexico
China	Digital Computer Hong Kong Ltd. 1303-1309 Dominian Ctr. 43-59 Queen's Road East Wanchai Hong Kong

DIGITAL SOFTWARE LICENSING

digital

DATA SHEET

This data sheet explains what software licenses are and why customers must obtain a software license to run any item of DIGITAL proprietary software.

DIGITAL does not sell software; DIGITAL offers software under a license agreement. DIGITAL has a license agreement for source software and object software. Since DIGITAL software programs are made available primarily in object code, this data sheet focuses on the purchase of object programs.

Introduction to Software Licensing

When DIGITAL hardware is purchased, all rights of ownership (legally called "title") to the hardware pass to the customer. This is not the case with software. DIGITAL regards software as proprietary information. Since software is easily reproduced, it must be legally protected from improper copying. Therefore, DIGITAL uses a combination of trade secret and copyright legal protection for software. DIGITAL protects its investment by retaining title to its software at all times and requires anyone wishing to use it to obtain a license.

How DIGITAL Licenses Software

The license agreement for object programs is contained in DIGITAL's standard Terms and Conditions of Sale and Corporate Volume Purchase Agreements instead of as a separate agreement. Therefore, when software products are purchased under DIGITAL's Terms of Sale, the software license agreement is made at the same time.

Key Principles of the License Agreement

Object code is licensed for single use. This means obtaining a license for a product allows the associated software to be used on the "single" CPU on which it was first installed. Other key points are as follows:

- If the licensed CPU temporarily malfunctions, the software may be run on another machine while the CPU is down.
- Copies of the software may be made for backup purposes if appropriate proprietary and copyright notices are included.
- The software may be modified or merged with other software if appropriate proprietary and copyright notices are included.
- The software may be used by the customer's employees and its agents directly concerned with the internal use, but may not be made available to anyone else.

Modification to the Software Product

Any modification to licensed software does not exempt the product from DIGITAL license terms. Every line of code from a software product falls under the terms of the license. Only those modifications that are not part of the original software are the customer's property. It is important to note that warranty on the product is limited to the original software supplied by DIGITAL.

Transferability of Licensed Software Products

License Transfer - A license agreement does not automatically allow transfer of licensed software to another party or another CPU. If the customer intends to sell the licensed CPU and pass on the software with the sale or move the software onto another CPU, permission must be obtained from DIGITAL. A case-by-case License Transfer is required to relicense the software.

Software Sublicensing - DIGITAL customers with a purchase agreement authorizing sublicensing, such as OEMs, may transfer licensed object products to their customers without a License Transfer. A valid sublicense, executed by an OEM with its customer, gives the OEM's customer the same license rights and responsibilities as a license agreement made directly with DIGITAL.

Source Software

Sources are only available for selected products. A license agreement for source software must be separately executed for each facility/location which intends to purchase sources in machine-readable, listing, or microfiche form. Further information and availability of sources can be found in the applicable Software Product Description (SPD).

Software Warranty

Each licensed software product offered has an SPD describing the warranty commitment for the product. Software products under DIGITAL warranty must conform to the description provided for a 90-day period, which generally begins upon product installation or 30 days after delivery. All other products are provided AS IS, without warranty. The SPD clearly states under which warranty category the product falls.

Purchasing the License for the Software Product

A license must be obtained for each CPU on which the licensed software will be used (unless otherwise specified by DIGITAL).

A Single-use License for object code is generally ordered according to the type/classifcation of the CPU or system configuration intended to run the product. Further information and availability can be found in the applicable SPD.

Software Product

A license is a prerequisite to purchase the associated software. The Media and Documentation Option for a product is ordered according to media type. Further information and availability of media can be found in the applicable SPD.

Purchasing Software Product Revisions/Updated Versions

If a licensed customer is not covered by a product service agreement, updated versions can be purchased when they are made generally available. Updated versions are ordered according to media type. A customer can also choose to run updated versions on additional CPUs, but not purchase multiple media distributions. If this is the case, the Software Revision Right-to-Copy option must be purchased for each CPU which runs the updated version.

Software Product Services

A licensed customer can purchase annual product service agreements to receive updated versions on media when available. A customer may choose to copy updated versions onto additional CPUs during this service agreement period. In this case, the software Service Right-to-Copy must be purchased for each CPU which runs the updated version. Further information and availability can be found in the applicable SPD. Your local DIGITAL office can be contacted for additional assistance.

DIGITAL EQUIPMENT COMPUTER USERS SOCIETY

BENEFITS OF BELONGING

The Digital Equipment Computer Users Society (DECUS) is one of the largest and most respected users groups in the computer industry today. Membership in DECUS, which is free and voluntary, provides the individual user with information and services not found anywhere else.

DECUS provides an environment where users of Digital Equipment Corporation products can share information with other users and with DIGITAL. Members can find out the latest news on DIGITAL's hardware, software, and educational products. The feedback exchange with DIGITAL allows the users of DIGITAL's products to have a voice in the company's future.

Founded in 1961, DECUS now has three autonomous areas worldwide - DECUS U.S., DECUS Europe, made up of eight independent chapters, and DECUS GIA (General International Area), made up of four independent chapters. DECUS services and activities are shared between these chapters through mutual agreements.

All DECUS services promote the exchange of information in a noncommercial environment. Included in these services are:

Special Interest Groups (SIGs)

These groups, formed around an area of common interest, exist for a variety of hardware, operating systems, languages, applications, and marketing areas. Participation in these groups allows fellow users to exchange information and share technical expertise in the areas of most interest to the users.

Local Users Groups (LUGs) and National Users Groups (NUGs)

LUGs and NUGs are licensed groups of individuals who gather to share information with other users on a periodic basis. Not only do they have common professional interest, but they also have geographic and cultural ties. DIGITAL representatives attending these meetings often unveil new products and services and supply updates on existing policies and procedures.

Symposia

DECUS holds symposia each year in the different chapters, two per year in the U.S. These meetings provide a unique opportunity for users with a wide spectrum of experience to meet for up to five days of intensive technical exchange. Symposium activities include workshops, clinics, panels, tutorials, and formal paper presentations. DIGITAL participates in symposia by sending Product Group managers and developers to discuss strategies, products, problems, and solutions.

Publications

The flow of information among users, as well as between users and DIGITAL, is the primary goal of DECUS. Various publications generated by DECUS support this communication. They include chapter newsletters and *The Proceedings*, a technical volume published after each symposium. DECUS also publishes Special Interest Groups' newsletters that provide information pertaining to specific DIGITAL products.

Program Library

The DECUS Program Library is the main vehicle for the exchange of software among users of all DIGITAL systems. The Library contains over 1000 software programs written and voluntarily submitted by users. These programs include compilers, editors, utilities, numerical and statistical functions, as well as games and graphic routines. The Library publishes an annual software catalog that lists and describes all the DECUS programs available to all users for a minimal charge.

You are cordially invited to join over 60,000 other users of DIGITAL products around the world and begin to share your experiences, both successes and problems.

For more information, contact the appropriate DECUS chapter office listed here.

DECUS CHAPTER OFFICES — WORLDWIDE

DECUS U.S.

DECUS, U.S. Chapter
219 Boston Post Road (BPO2)
Marlborough, Massachusetts 01752
U.S. Activities: (617) 480-3259 (3302)
Library: (617) 480-3521
Finance and Administration: (617) 480-3634

DECUS Europe

DECUS At Large (in Europe)
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CH-1213 PETIT-LANCY 1/GE
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DECUS Denmark
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DK-2820 Gentofte
Denmark

DECUS France
BP. 136
F-91004 EVRY CEDEX

DECUS Holland
Kaap Hoorndreef 38
NL-3563 AV UTRECHT
The Netherlands

DECUS Muenchen
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D-8000 MUENCHEN 81
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Viale Fulvio Testi 11
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DECUS Sweden
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November 1985